

**2017 Crop Demonstrations and Research Trials
St. Francis County**



St. Francis County Cooperative Extension Service

Agent:

Cody Griffin

CEA- Staff Chair



DIVISION OF AGRICULTURE
RESEARCH & EXTENSION

University of Arkansas System

2017 Roundup & Xtend Soybean Variety Trial

County: St. Francis

Agent: Cody Griffin

Cooperator: Chris Roberts

Location: 35.1310760, -90.5648350

Soil Type: Silt Loam

Objective: Evaluate Roundup & Xtend varieties under farm level management. Determine local yield potential and disease and insect reaction of commercially available varieties.

Methods: For this study 9 varieties were planted side by side to evaluate yield. Each variety was planted in a 480 ft. x 20 ft. strip. Throughout the growing season the study was managed under the cooperators regular management practices. Each variety was treated exactly the same with no variation. To calculate yield each strip was harvested individually and weighed in a weigh wagon. A sample of each variety was taken to evaluate test weight and moisture.

Results:

Roundup/Xtend Soybean Variety Trial				
Variety	Weight	Test Weight	% Moisture	Yield
Bayer 4590	906	56.2	10.4	70.695
Cropland 4516	872	57.3	10.4	68.041
Delta Grow 4670	910	55.5	10.5	70.94
Progeny 4620	872	58.6	10	68.305
Syngenta 45-K5	938	56.9	10.4	73.191
Cropland 4825	936	57.2	11	72.54
Delta Grow 4790	978	56.7	10.6	76.165
Progeny 4816	972	57.8	10.8	75.477
Syngenta 48-R2	928	58	16.1	67.774

2017 Soybean Inoculant Study

County: St. Francis

Agent: Cody Griffin

Cooperator: Chris Roberts

Location: 35.1310760, -90.5648350

Soil Type: Silt Loam

Objective: Evaluate soybean inoculants and how they affect yield in soybeans under farm level management. Determine yield between inoculated and non-inoculated soybeans.

Methods: For this study 4 reps of inoculated and non-inoculated soybeans were planted in alternating strips. Each rep was planted with the same variety. Each strip measured 960 ft x 40 ft. Throughout the growing season the study was managed under the cooperators regular management practices. Each rep was treated exactly the same with no variation. To calculate yield each strip was harvested individually and weighed in a weigh wagon. A sample of each variety was taken to evaluate test weight and moisture.

Results:

Soybean Inoculant Study				
Reps	Weight	Test Weight	% Moisture	Yield
Inoculated #1	1770	57.1	10.6	68.38
Non Inoculated #1	1730	57	10.5	67.48
Inoculated #2	1796	57	10.4	70.06
Non Inoculated #2	1786	57.9	10.4	69.66
Inoculated #3	1802	57.7	10.5	69.62
Non Inoculated #3	1742	56.6	10.3	67.95
Inoculated #4	1782	56.9	10.1	69.525
Non Inoculated #4	1755	57.9	10.2	68.62

2017 County Corn Standardized Hybrid Trial

County: St. Francis

Agent: Cody Griffin

Cooperator: Chris Roberts

Location: 35.136294, -90.565229

Soil Type: Silt Loam

Objective: The program's goal is to increase knowledge on selected hybrids that are being evaluated in the University of Arkansas Corn Hybrid testing program (www.arkansasvarietytesting.com). The trials were a collaborative effort between growers, County Extension agents, Extension specialists, and industry representatives. In the trials, producers followed their normal production practices they use on their farms.

Methods: Information collected in each trial included; soil type, planting date, agronomic production practices utilized by each producer, final plant population, test weight, grain moisture at harvest, plant lodging and yield. Plots were planted with producer equipment and typically were six rows wide by the length of field (500-1500 ft). Grain moisture and test weights were recorded by commercial or hand held grain analysis equipment. Grain yields were adjusted to 15.5% moisture. When lodging occurred visual ratings were taken by County Extension agents.





Corn Standardized County Hybrid Trials Information Sheet



County:	St. Francis	Crop:	Corn Hybrid Trial
Grower:	Chris Roberts		
County Agent:	Cody Griffin		
Location of Field:	Shell Lake	GPS:	35.136294, -90.565229
Soil Type:	Silt Loam		
Previous Crop:	Soybean		
Planting Date:	April 7, 2017		
Row Width:	30"		
Planting Population:	34,000/acre		
Harvest Date:	September 16, 2017		
Fertility: (lb/ac)	N	P	K
---	S	Zn	
--- Preplant			
--- Sidedress			
--- Pretassel			
Total Fertility:	0	0	0
Irrigation Type:		Number of Times:	
Hybrid	Adj. Yield ¹	Area	Weight
	Yield	Yield	% Moisture
		Plant Stand ²	Lodging Score ³
		Test Weight	
Armor 1500	227.14	0.400	5,052
Dekalb 64-35	257.03	0.400	5,644
Delta Grow 2888	239.70	0.400	5,344
Dyna Gro D57VP51	263.32	0.400	5,850
Terral Rev 25BHR26	244.60	0.400	5,396
Armor 1717	248.61	0.400	5,478
Dekalb 68-26	247.86	0.400	5,468
Delta Grow 3660	231.67	0.400	5,214
Dyna Grow D58VC37	254.16	0.400	5,620
Terral REV 28BHR18	242.72	0.400	5,424
Extra	236.37	0.400	5,276

¹ Yield is adjusted to 15.5% moisture.
² Plant Stand is given as plants per acre.
³ Lodging score - 1 is no lodging, 10 is completely lodged.

2017 Producer Rice Evaluation Program (PREP)

County: St. Francis

Agent: Cody Griffin

Cooperator: Drew Flowers

Location: (35.0474500, -90.99800470)

Soil Type: Silt Loam

Objective: Evaluate rice hybrids/varieties entered in the University of Arkansas Performance Trials, under farm level management. Determine local yield potential and disease reaction of commercially available hybrids/varieties.

Demo Setup:

The test included 20 cultivars (7 drill rows of each), replicated 4 times. Plots were 15 feet long. Some seed sprouted at planting while some required a rain to emerge. The result was a plant stand with a wide range of maturities.



Preliminary Data Summary

Table 5. Preliminary Data Summary for Producer Rice Evaluation Program (PREP) Trials by County.

Year	Location (County)	Cultivar	Grain Type	Moisture (%)	Lodging (%)	Grain Yield (bu/A)
2017	St. Francis	Diamond	L	22.6	0.0	174.3
2017	St. Francis	LaKast	L	19.4	0.0	169.0
2017	St. Francis	RoyJ	L	22.4	0.0	156.9
2017	St. Francis	Thad	L	19.4	0.0	158.6
2017	St. Francis	Titan	M	20.1	0.0	175.7
2017	St. Francis	Jupiter	M	21.4	0.0	148.1
2017	St. Francis	CL272	M	20.2	0.0	165.2
2017	St. Francis	CL111	L	18.8	0.0	165.9
2017	St. Francis	CL151	L	21.1	0.0	177.8
2017	St. Francis	CL153	L	21.1	0.0	156.4
2017	St. Francis	CL163	L	22.6	0.0	153.4
2017	St. Francis	CL172	L	21.2	0.0	152.1
2017	St. Francis	RT CLXL745	L	18.0	0.0	189.9
2017	St. Francis	RT 7311CL	L	18.9	0.0	177.2
2017	St. Francis	RT 7812CL	L	20.4	0.0	186.0
2017	St. Francis	RT Gemini 214 CL	L	20.1	0.0	183.6
2017	St. Francis	RT XL753	L	17.8	0.0	173.5
2017	St. Francis	RT XL760	L	20.1	0.0	178.4
2017	St. Francis	PVL01	L	20.6	0.0	143.0
2017	St. Francis	MM14	M	20.3	0.0	154.1
		MEAN	--	20.3	0.0	167.0

Planted: April 19, 2017

Harvested: September 15, 2017

2017 NSTaR / GreenSeeker Demonstration

County: St. Francis

Agent: Cody Griffin

Cooperator: Drew Flowers

Location: (35.0474500, -90.99800470)

Soil Type: Silt Loam

Purpose & Objectives:

Investigate the potential to use N-STaR (Nitrogen-Soil Test for Rice) to determine the level of Preflood nitrogen (N) fertilizer needed by rice. Follow up with GreenSeeker (GS) measurements of the rice canopy at mid-season (MS) for an assessment on the need for N fertilizer.

Demo Setup: Soil samples were taken (10 cores 18 inches deep) from the GS test field and sent to the N-STaR lab for a recommendation on N fertilizer. The NSTaR recommendation called for 160 units of N per acre (115 preflood fb 45 at midseason). Nitrogen rich reference plots (2 - each 5 feet by 5 feet) were flagged off in the GS demo field. Urea (1 cup = 165 units/acre) was hand applied to each of the reference plots just prior to flood establishment. These plots ended up with very high N rates (hand application plus farmer's application) that set our bar for "no N deficiency" when we used our GS unit to determine the need for midseason N. GS measurements were taken three, four, and 5 weeks after flooding on the reference strips and at 10 random spots (each 50 feet long) in the field. The handheld GS unit was held 24 inches above the canopy to get NDVI (Normalized Difference Vegetative Index) measurements (combination readings of canopy size & color). A response index (RI) was calculated by dividing the average GS readings of the reference strips by the average GS readings of the 10 random spots in the field. If the RI was over 1.2, then a midseason N application was needed. For a lower RI, it was recommended to come back 1 week later to take another set of GS readings and make a final call on the need for MS nitrogen.

Fertility & Pest Control:

200lbs urea was applied preflood on June 6th to the GS demo and check fields. The GS demo did not receive Midseason nitrogen.

Phosphorus and potassium fertilizer were applied according to soil test recommendations during pre-plant tillage. Red rice and weedy rice pressure was a problem in the field. The GS demo field also had more barnyardgrass escapes as well as blast development compared to the check field.

Results & Discussion:

GreenSeeker readings at 3 weeks after flooding resulted in a 1.1 RI. The following week the RI was still good at 1.12. At this site the GS unit measurements signified that no MS nitrogen was needed. Plant canopy and color was adequate to insure good yields. Since the RI was well under the 1.2 threshold needed to trigger a MS fertilizer application, the producer did not apply MS fertilizer on the GS demo field. With similar soil type, planting date, and crop rotation, yield data comparison would have been good information at this test site to see if yields were similar for rice receiving MS N and for rice not getting a shot of MS N. However, we had to scratch comparing yields for the two fields because the GS demo field had significantly more weed and disease pressure compared to the check field.

Rice Multiplier Field

County: St. Francis

Agent: Cody Griffin

Cooperator: Drew Flowers

Location: (35.0474500, -90.99800470)

Soil Type: Silt Loam

Variety: Diamond

Previous Crop: Rice Roy J

Yield:

Purpose & Objectives:

The Arkansas Row Crop Multiplier Program is an interdisciplinary effort between growers, county Extension agents, Extension specialists, and researchers. It is an on-farm demonstration of all the research-based practices and technologies recommended to maximize the production and profitability of row crops in Arkansas. The overall goal is to verify that management according to University of Arkansas recommendations can result in increased profitability compared to standard producer practices.

Soil Samples and Field Prep

To prepare this demonstration soil samples and NSTaR samples were pulled in the early spring. Cultural practices included disking twice, field cultivating once, and landplaning.

Planting and Seeding Rate

The field was planted by drilling Diamond at 80lbs/acre on April 20th.

Pesticide Program:

April 16th – 12.8oz of Command/Acre

May 31st – 2qts. Superwham/Acre 12oz Quinstar/Acre 2oz. Strada Pro/Acre 1% Crop Oil

July 24th – 21oz Quilt Excel/ Acre

Aug 15th – 1 to 40 Mustang Max

Fertilization Program:

May 16th – 100lbs. Mesz/Acre (Mesz = Nitrogen 12% Phosphorus 17.5% Sulphur 10% Zinc 1%)

June 6th – 200lbs. Urea/Acre (Urea 46-0-0)

Results & Discussion:

The average yield for this field was 155-165 bu/acre. The yield was lower than expected due to weed and disease pressure. Rice Blast ended up impacting the crop in august which led to small seed heads and blanking. Due to red rice and weedy rice we recommend that the next rice rotation be planted in a Clearfield variety.

2017 Large Block Replicated Rice Trial

County: St. Francis

Agent: Cody Griffin

Cooperator: Drew Flowers

Location: (35.0474500, -90.99800470)

Soil Type: Silt Loam

Previous Crop: Rice Roy J

Purpose & Objectives

Our purpose is to conduct large-scale replicated trials on commercial rice farms and accumulate large-plot replicated data to bridge the gap between small-plot data and grower fields. We will accumulate data to support development of rice budgets, computer-assisted management programs, agronomic practices, resource utilization, and statewide extension programs. This program will provide hands-on training of the best management practices for rice producers.

Soil Samples and Field Prep

To prepare this demonstration soil samples and NSTaR samples were pulled in the early spring. Cultural practices included disking twice, field cultivating once, and landplaning.

Planting and Seeding Rate

Each strip was drilled at the optimal planting rate for each variety with a 25ft. drill on April 19th.

Pesticide Program:

April 16th – 12.8oz of Command/Acre

May 31st – 2qts. Superwham/Acre 12oz Quinstar/Acre 2oz. Strada Pro/Acre 1% Crop Oil

July 24th – 21oz Quilt Excel/ Acre

Aug 15th – 1 to 40 Mustang Max

Fertilization Program:

May 16th – 100lbs. Mesz/Acre (Mesz = Nitrogen 12% Phosphorus 17.5% Sulphur 10% Zinc 1%)

June 6th – 200lbs. Urea/Acre (Urea 46-0-0)

Results:

Loc	Plot No.	Cultivar	Plot Width (ft)	Plot Length (ft)	Acreage	Wet Weight (lbs)	Moisture (%)	Test Wt (lbs)	Dry Weight (lbs)	Grain Yield (bu/A)	Milled Rice	Head Rice
St. Francis	101	LaKast	25	550	0.315657	2072	13.3	42.1	2041.3909	143.7139	69.5	59.6
St. Francis	102	Taggart	25	550	0.315657	1990	13.5	43.5	1956.0795	137.708	71.6	53
St. Francis	103	Diamond	25	550	0.315657	2246	13	42.5	2220.4773	156.3216	68.4	50.1
St. Francis	104	Roy J	25	550	0.315657	1686	12.9	37.4	1668.7568	117.4805	62.3	44.6
St. Francis	201	Diamond	25	550	0.315657	2310	13.3	41.8	2275.875	160.2216	69.1	49.9
St. Francis	202	LaKast	25	550	0.315657	2230	13.2	41.2	2199.5909	154.8512	70.2	58.7
St. Francis	203	Roy J	25	550	0.315657	1954	13.1	40.3	1929.575	135.8421	66.1	51.1
St. Francis	204	Taggart	25	550	0.315657	2124	13.8	43.5	2080.5545	146.471	70.4	51.1
St. Francis	301	Roy J	25	550	0.315657	1960	13.6	39.6	1924.3636	135.4752	67.2	51.8
St. Francis	302	LaKast	25	550	0.315657	2256	13.7	41.6	2212.4182	155.7542	68.9	56.2
St. Francis	303	Diamond	25	550	0.315657	2322	13.5	43.7	2282.4205	160.6824	66.9	47.4
St. Francis	304	Taggart	25	550	0.315657	2126	14.3	44.1	2070.4341	145.7586	68.5	48
St. Francis	401	Roy J	25	550	0.315657	1932	14.2	41.1	1883.7	132.6125	67.5	51.4
St. Francis	402	Diamond	25	550	0.315657	2250	14		2198.8636	154.8	67	48
St. Francis	403	LaKast	25	550	0.315657	2134	14	43.1	2085.5	146.8192	69.3	55.6
St. Francis	404	Taggart	25	550	0.315657	2024	14.8	43.6	1959.6	137.9558	72.4	50.4

Summary:

	Moisture	Test Weight	Dry Weight	Grain Yield	Milled Rice	Head Rice
LaKast	13.55	42	2134.725	150.2846	69.475	57.525
Taggart	14.1	43.675	2016.667	141.9734	70.725	50.625
Diamond	13.45	42.66667	2244.409	158.0064	67.85	48.85
Roy J	13.45	39.6	1851.599	130.3526	65.775	49.725

2017 Cotton Variety Trial

County: St. Francis

Agent: Cody Griffin

Cooperator: Joe Wittenton

Location: (34.9461, -90.8184)

Soil Type: Loring Silt Loam

Previous Crop: Cotton

Planting Date: 5-22-2017

Harvested: 10-31-2017

Objectives: Evaluate cotton varieties under farm level management. Determine local yield potential and disease and insect reaction of commercially available varieties.

Results:

Variety	Seedcotton	LintFrac.	Lint	
Name	(lb/A)	(%)	(lb/A)	Rank
DP1725 B2XF	3034	46.14	1400	1
PHY340 W3FE	3051	45.85	1399	2
DP1646 B2XF	3093	45.01	1392	3
DP1518 B2XF	3179	43.26	1375	4
PHY330 W3FE	2965	45.13	1338	5
ST4949 GLT	2897	44.11	1278	6
NG3522 B2XF	3008	41.52	1249	7
DG3385 B2XF	2923	42.45	1241	8
DG3109 B2XF	2905	42.1	1223	9
NG4601 B2XF	2711	44.59	1209	10
ST5020 GLT	2661	40.09	1067	11

Bollworm Moth Monitoring

County: St. Francis/Monroe

Agent: Cody Griffin

Objective: Monitor Bollworm Moth levels during growing season to help predict when larvae populations might increase & to plan for insecticide treatment accordingly.

Project Description

- Eight moth traps were placed at different regions in the county in late May
- Trap Sites were planted in corn, soybeans, and cotton
- Traps were run weekly for 9 weeks
- Pheromone Strips were replaced as recommended

Results:

